

Method and System for an Electrically and Thermally Enhanced Die-up Ball Grid Array

Abstract

5 An electrically and thermally enhanced die-up tape substrate ball grid
array (BGA) package and die-up plastic substrate BGA package are described.
A substrate that has a first surface and a second surface is provided. The stiffener
has a first surface and a second surface. The second stiffener surface is attached
10 to the first substrate surface. An IC die has a first surface and a second surface.
The first IC die surface is mounted to the first stiffener surface. A plurality of
solder balls is attached to the second substrate surface. In one aspect, a heat
spreader is mounted to the second IC die surface. In another aspect, the stiffener
is coupled to ground to act as a ground plane. In another aspect, the substrate has
15 a window opening that exposes a portion of the second stiffener surface. The
exposed portion of the second stiffener surface is configured to be coupled to a
printed circuit board (PCB). In another aspect, a metal ring is attached to the first
stiffener surface. In another aspect, wire bond openings in the stiffener are
bridged by one or more studs.

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